

REMARKS

Claims 1-36 remain pending in the application. Favorable reconsideration is respectfully requested in view of the following remarks.

The indication that independent claim 36 is allowed and that claims 12, 13, 14, 20, and 33-35 define allowable subject matter is noted with appreciation.

Claims 1, 4-11, 16-19, 21-25, 27-30, and 32 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Wang (US 20060154633) in view of Jalloul et al. (US 7,251,497 -- henceforth "Jalloul"). This rejection is respectfully traversed.

The rejection should be withdrawn for at least the following reasons:

- Jalloul is not valid prior art with respect to this Application. Thus, the Office has failed to make out even a *prima facie* case of obviousness against the claims.
- With respect to the rejection of claims 17-19 and 21-24, the stated ground of rejection is improper, and the one reference relied on in the Office Action (Wang) fails to disclose all of the limitations defined by these claims.
- The Office Action is flawed to the extent that Applicants cannot ascertain exactly what references the Office intended to rely on in support of the rejections.

These separate arguments are discussed in greater detail on the following.

1. The Office has failed to make out even a *prima facie* case of obviousness because Jalloul is not valid prior art with respect to this Application.

In supporting its rejection, the Office agrees that Wang is insufficient to support the rejection at least because it fails to disclose or suggest "estimating the interference by determining a variance of symbols in at least two portions of the dedicated channel" (recited in each of independent claims 1, 25, and 30, and therefore also inherent in each of the related dependent claims 4-11, 16, 27-29, and 32). The Office attempts to make up for the deficiencies of Wang by relying on Jalloul. **However, as expressly argued in Applicants' last response and not rebutted by the Office in the present Action, reliance on Jalloul is unfounded at least because Jalloul is not valid prior art against any of Applicant's claims.** Jalloul was published on July 31, 2007 (June 30, 2005 if one considers the related US 2005/0143117), which is well after Applicants' filing date, so if Jalloul is to be considered prior art against Applicants' claims, it must be under 35 U.S.C. §102(e).

However, Section 102(e) of the patent statutes requires that such prior art be "a patent granted

on an application for patent by another filed in the United States before the invention by the applicant for patent.” (Emphasis added.) Jalloul fails to satisfy this requirement because, as far as Applicants are able to ascertain, Jalloul’s earliest U.S. filing date is December 31, 2003 which occurred after Applicants’ own November 4, 2003 filing date.

Therefore, Jalloul cannot be applied as prior art against any of Applicants’ claims. As the Office has already acknowledged that Wang is insufficient to single-handedly support the rejection of claims 1, 4-11, 16, 25, 27-29, 30, and 32, the rejection of these claims should be withdrawn.

2. With respect to the rejection of claims 17-19 and 21-24, the stated ground of rejection is improper, and the one reference relied on in the Office Action (Wang) fails to disclose all of the limitations defined by these claims.

As to independent claim 17 and its dependent claims 18-19 and 21-24, these are believed to be patentably distinguishable over the valid prior art of record at least because independent claim 17 defines:

A method of searching for an empty channelization code *m* in a terminal in a code division multiple access communication system, comprising the steps of:

- generating an initial interference estimate (I-estimate);
- setting a threshold based on the initial I-estimate;
- selecting a candidate empty channelization code *m*;
- for the candidate empty channelization code *m*, forming an I-estimate;
- comparing the formed I-estimate to the threshold; and
- if the formed I-estimate exceeds the threshold, selecting another candidate empty channelization code and repeating the forming and comparing steps, otherwise identifying the candidate empty channelization code *m* as an empty channelization code.

It is noted that, in its arguments, the Office relies solely on Wang in support of its rejection of this independent claim. The same is true with respect to dependent claims 18-19 and 22-24. Therefore, Applicants first submit that **the ground of rejection of these claims is**

improper: Claims 17-19 and 21-24 appear to have been rejected as allegedly being **anticipated** by Wang (a Section 102 rejection), rather than being allegedly unpatentable over a combination of Wang and Jalloul (a Section 103 obviousness rejection).

Moreover, Wang fails to disclose the features defined by independent claim 17, and therefore cannot single-handedly support a rejection of this claim. The only argument that the Office provides to support its contention that Wang discloses all of the claimed features is “Wang discloses in figure 10, a method which estimates the power of a desired channel using its channelization (fig. 10 and page 4, [0052]).”

Applicants fail to see the relevance of the Office’s argument, since it does not address any of the features defined in the body of claim 17. Independent claim 17 is directed to “A method of searching for an empty channelization code m in a terminal in a code division multiple access communication system.” Thus to anticipate (or render obvious) this claim, Wang should disclose the steps recited in claim 17, and it does not. At best, the cited portion of Wang discloses “Step S2 searches for and selects a low SF idle channelization code from the OVSF tree using information regarding occupied channelization codes.” Searching a tree of known information about which codes are occupied and which are not is clearly different from Applicant’s claimed steps that involve “generating an initial interference estimate (I-estimate); setting a threshold based on the initial I-estimate; selecting a candidate empty channelization code m; for the candidate empty channelization code m, forming an I-estimate; comparing the formed I-estimate to the threshold; and if the formed I-estimate exceeds the threshold, selecting another candidate empty channelization code and repeating the forming and comparing steps, otherwise identifying the candidate empty channelization code m as an empty channelization code.”

Moreover, it would not make technical sense for Wang to disclose or otherwise suggest Applicants’ claimed steps. Wang discloses a base station that performs uplink channel estimation. (See, e.g., Wang at page 1, paragraph 0006.) As expressly stated in paragraph 0043 of Wang, which codes are occupied and which are not “are known to the base station.” It is therefore completely unnecessary for the base station to go through a process of testing received signals to explore and find an empty channelization code.

By contrast, Applicants’ claimed methods and apparatuses are expressly stated as being for “estimating interference in a terminal” (emphasis added). Unlike a base station (which serves all the terminals in its cell), the terminal inherently knows only the codes that it is using; of relevance here is that the terminal does not have information about what codes

other terminals may or may not be using. For this reason, Applicants' have devised, and now claim, a technique that enables the terminal to test candidate channelization codes to find out whether they are in use or not (i.e., empty).

For at least the foregoing reasons, independent claim 17 and its dependent claims 18-19 and 21-24 are believed to be patentably distinguishable over Wang. (Jalloul is not addressed here not only because it was not relied on in this part of the Office Action, but also because it is not valid prior art against Applicants' claims.)

3. The Office Action is flawed to the extent that Applicants cannot ascertain exactly what references the Office intended to rely on in support of the rejections.

This is evidenced by the fact that, to a great extent, the Office Action cites figures, element numbers, pages and paragraph numbers that are alleged to be relevant portions of Wang, but which in fact correspond exactly to the figures, element numbers, pages and paragraph numbers set forth in the final Office Action of July 11, 2008 when discussing Tirola et al (US 20040076132), a reference that is not cited in the present Office Action. The cited portions of Wang do not appear to be relevant to the rejection and, in some instances, the cited portions of Wang do not exist in that document (e.g., "fig. 2, 204", and "page 4, [0070]", both cited on page 3 of the Office Action). In one instance, the Office Action even refers to "Tirola" in support of the rejection (see, e.g., Office Action at page 3, line 14.) The Office is invited to make a side-by-side comparison of the corresponding rejections set forth in the present and previous Office Actions to identify the extent to which earlier references to portions of Tirola et al. are now set forth as being references to Wang.

Therefore, Applicants are unsure exactly what references it should be discussing in this traversal of the rejections.

For at least the foregoing reasons, Applicants respectfully assert that each of claims 1, 4-11, 16, 17-19, 21-24, 25, 27-29, 30 and 32 is novel and nonobvious over the valid prior art of record regardless of whether those references are considered individually or in combination. It is therefore respectfully requested that the rejection of these claims under 35 U.S.C. §103(a) be withdrawn.

Claims 2-3, 15, 26, and 31 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Wang in view of Jalloul as applied to claims 1, 25 and 30 above, and

further in view of Jokinen et al. (US 6038238 -- henceforth “Jokinen”). This rejection is respectfully traversed.

As explained earlier, Jalloul is not valid prior art against Applicants’ claims, and therefore cannot be used to support the present rejections. Claims 2-3, 15, 26, and 31 variously depend from independent claims 1, 25, and 30, and are therefore patentably distinguishable over the Wang reference for at least the reasons set forth above (e.g., that the Office has expressly acknowledged that Wang, taken alone, fails to support the rejection of the base claims, and that the Office’s arguments appear, to a large extent, to not even be referring to Wang but rather to Tirola -- a document not relied on in the present rejections). Jokinen fails to make up for the deficiencies of Wang, so that any combination of Wang and Jokinen would still lack at least:

- “estimating the interference by determining a variance of symbols in at least two portions of the dedicated channel”. (Emphasis added.)

Further, the Office acknowledges that Wang fails to disclose determining whether the communication system is not using discontinuous transmission (DTX), but relies on Jokinen as making up for this deficiency. In this respect, the Office argues that “Jokinen et al. ... discloses in (fig. 4), a method to realize discontinuous transmission (DTX) in a telecommunications network (col. 5, lines 20-36)” and that it would have been obvious “to have utilized the method of Jokinen et al in the method of Wang ... in order to determine whether the communication system is not using discontinuous transmission (DTX). The motivation to utilize the method of Jokinen et al in the method of Wang ... would be to reduce co-channel interference and its effect on the communication quality (col. 1, lines 16-18).”

It is respectfully asserted that the Office’s argument is not persuasive because it is technically inaccurate. If one were motivated to reduce co-channel interference in the manner taught by Jokinen, one would use DTX. If combined with Wang, the combination would involve using DTX for co-channel interference reduction (as taught by Jokinen) while at the same time performing interference estimation in the manner taught by Wang.

However, Applicants’ claims do not define using DTX for interference estimation or any other reason. Rather, they qualify the claimed method by stating that “determining the variance of symbols in at least two portions of the dedicated channel is performed only after

first determining that the communication system is *not* using discontinuous transmission (DTX).” (Emphasis added.) Support for this feature can be found in the specification at, for example, Figure 4, steps 413 and 417 (in which both DPCCH and DPDCH are used only when DTX mode is not in use).

Jokinen is silent with respect to interference estimation, and therefore cannot suggest a terminal basing its interference estimation technique on whether DTX is in use. Wang’s interference technique involving unused channelization codes has no need for knowledge of whether DTX is in use -- Thus, performing this step as part of Wang’s estimation technique would be pointless. There is therefore no teaching or suggestion to combine or modify any of the prior art to arrive at Applicants’ claimed invention.

For at least the foregoing reasons, it is respectfully asserted that the subject matter defined by claims 2-3, 15, 26, and 31 is patentably distinguishable over the valid prior art of record. Accordingly, it is respectfully requested that the rejection of these claims under 35 U.S.C. §103(a) be withdrawn.

The application is believed to be in condition for allowance. Entry of the proposed amendments and prompt notice of allowance are respectfully requested.

Respectfully submitted,
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